Patent Claims

1. A sensor for authenticity identification of luminescent identification features on documents, in which the identification feature is illuminated with an excitation wavelength and may respond at a different wavelength, with the response wavelength being detected and evaluated by a radiation receiver, **wherein** a focused beam (31, 32), which is emitted from a beam source (1), is converted by focusing optics (2, 3) in such a manner that a scanning bar, which is approximately in the form of a line, is projected on the surface of the object (5) to be investigated and optically excites at least a subregion of the identification feature (21) which is arranged on the object (5), and the optical response signal from the identification feature is passed via detection optics (9, 9', 10) to an evaluation unit (11) which evaluates this optical response signal, and wherein the sensor is manually controlled.

2. The sensor as claimed in claim 1, **wherein** the sensor has proximity identification, which switches on a laser (laser diode 1) only when the object (5) to be investigated is located closely in front of and touching an outlet window (7) in the head surface (26, 27) of the sensor.

3. The sensor as claimed in claim 2, **wherein** the proximity identification operates without making contact.

4. The sensor as claimed in claim 2 ~~or 3~~, **wherein** the proximity identification reacts to diffuse reflection on the surface of the object (5).

5. The sensor as claimed in claim 2, **wherein** the proximity identification operates by touching the object (5).

6. The sensor as claimed in one of claims 2 to 4, **wherein**, in addition to the proximity identification, a manually operated pushbutton (15) is provided, which is coupled in an AND circuit to the proximity identification or whose previous operation is a prior condition for activation of the laser after identification of the proximity within a short time window.

7. A sensor for authenticity identification of luminescent identification features on documents, in which the identification feature (21) is illuminated with an excitation wavelength and may respond at a shorter, longer or equal wavelength, with the response wavelength being detected and evaluated by a radiation receiver, **wherein** the focused beam (32, 33) which is produced on the object (5) is produced by at least one laser source (1) which passes through line optics (2, 3).

8. The sensor as claimed in one of claims 1 ~~to 6~~, **wherein** the laser focused beam (32, 33) which is produced by the laser is imaged differently in the X-direction and Y-direction on the object (5).

9. The sensor as claimed in claim 7, **wherein** the focusing in the X-plane and Y-plane is produced at a different height above the object (5).

10. The sensor as claimed in one of claims 7 ~~to 9,~~ **wherein** the largest angles of the focused beams in the X-plane or Y-plane reach an angle of more than +/-10° to the optical axis.

11. The sensor as claimed in one of claims 1 ~~to 10,~~ **wherein** external light identification is integrated in the reception path of the authenticity identification of the identification feature (21).

12. The sensor as claimed in one of claims 1 ~~to 10,~~ **wherein** the external light identification is integrated in the arrangement for proximity identification without making contact.

13. The sensor as claimed in one of claims 1 ~~to 12,~~ **wherein** the handheld sensor can be classified in laser class 3A.

14. The sensor as claimed in one of claims 1 ~~to 13,~~ **wherein** the laser is pulsed.

15. The sensor as claimed in one of claims 1 ~~to 14,~~ **wherein** the sensor has wide-aperture receiving optics with an aperture ratio of virtually 1 or less.

16. An identification feature for detection using the sensor as claimed in one of claims 1 ~~to 15~~, wherein, in order

to identify the identification feature (21) on a document, the signet is equipped at least in subregions with a pigment which can be detected using the up-conversion effect.

17. The identification feature for identification using the sensor as claimed in ~~one of~~ claims 1 ~~to 16~~, **wherein** the identification feature (21) which is in the form of a fluorescent identification feature, can be detected using the down-conversion effect.

18. The identification feature for detection using the sensor as claimed in ~~one of~~ claims 1 ~~to 17,~~ **wherein** in the form of a fluorescent identification feature, is excited at a specific wavelength, and responds at the same wavelength.

19. The identification feature for detection using the sensor as claimed in one of claims 1 ~~to 18,~~ **wherein** the emission wavelength of the identification feature has the same wavelength as the excitation wave, and wherein the pulse response is delayed in time with respect to the excitation pulse.

20. The identification feature for detection using the sensor as claimed in ~~one of~~ claims 1 ~~to 19~~, **wherein** the pigments are added directly to an applied solution, to an applied paint, to the adhesive or to the paper.